

CLAIMS:

1. A method of compensating for offset in a received signal, the signal being modified by a sequence of symbols, each symbol extending over T_s signal samples, the method comprising the steps of:
 - (a) dividing the received signal into frames;
 - 5 (b) dividing each frame into a plurality of N_b sub-frames;
 - (c) forming N_b sequences of values, the values being derived from the corresponding sub-frame within each frame; and
 - (d) taking said N_b sequences as successive estimates of a frame sequence correctly aligned (to the sequence of symbols).
- 10 2. A method as claimed in claim 1, wherein each frame is of predetermined length T_s .
3. A method as claimed in claim 1, wherein there is an inter-frame overlap.
- 15 4. A method as claimed in claim 1, wherein each sub-frame overlaps an adjacent sub-frame.
5. A method as claimed in claim 1, wherein N_b lies within the range 2 to 8.
- 20 6. A method as claimed in claim 1, wherein the sequence of symbols comprises L_w symbols, the received signal being divided into L_F frames, wherein L_F is an integral multiple of L_w .
- 25 7. A method as claimed in claim 1, wherein said sequence of symbols comprises a sequence of values convolved with a window shaping function that has a band limited frequency behavior and a smooth temporal behavior.

8. A method as claimed in claim 7, wherein said window shaping function has a symmetric or an anti-symmetric temporal behavior.

9. A method as claimed in claim 1, wherein said sequence of symbols comprises
5 a sequence of at least one of raised cosine functions or bi-phase functions.

10. A method as claimed in claim 1, wherein said offset is a time offset.

11. A method as claimed in claim 1, the method further comprising processing
10 each estimate as though it were the correctly aligned frame sequence, so as to determine
which estimate is the best estimate.

12. A method as claimed in claim 11, wherein the best estimate is assumed to be
the first estimate that, when processed, exceeds one or more predetermined conditions; said
15 processing of estimates stopping once the best estimate has been determined.

13. A method as claimed in claim 1, the method further comprising the step of
correlating each of said estimates with a reference corresponding to said sequence of
symbols; and
20 taking the estimate with the maximum correlation peak value as the best estimate.

14. A method as claimed in any one of claims 11, 12 or 13, wherein once a first
best estimate has been determined for a first signal or portion of a signal, the method is
repeated for a further received signal or portion of a signal, the estimates from said further
25 signal being processed in an order dependent upon said first best estimate.

15. A computer program arranged to perform the method as claimed in claim 1.

16. A record carrier comprising a computer program as claimed in claim 15.
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17. A method of making available for downloading a computer program as
claimed in claim 15.

18. An apparatus arranged to compensate for offset in a received signal, the signal being modified by a sequence of symbols, each symbol extending over T_s signal samples, the apparatus comprising:

- a divider arranged to divide the received signal into frames;
- a divider arranged to divide each frame into a plurality of N_b sub-frames; and
- a processor arranged to form N_b sequences of values, the values being derived from the corresponding sub-frame within each frame; and to take said N_b sequences as successive estimates of a frame sequence correctly aligned with the sequence of symbols.

10 19. An apparatus as claimed in claim 18, the apparatus further comprising a buffer arranged to store said N_b sequences.

20. A decoder comprising the apparatus as claimed in claim 18.